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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,005	12/14/2004	Masashi Sugiyama	034145.002	6706

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EXAMINER	
JOHNSON, CHRISTINA ANN	

ART UNIT	PAPER NUMBER
1725	

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/518,005	SUGIYAMA ET AL.	
	Examiner	Art Unit	
	Christina Johnson	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 3 recites the limitation "reducing/removing" in line 2. This limitation renders the claims indefinite because it is not clear which is required - reduction or removal.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Grasselli et al.

Grasselli et al. (US 5,374,410) discloses a catalyst composition and method for the removal of nitrogen oxides in waste gas streams. The method comprises converting nitrogen oxides present in oxygen-containing gaseous effluents to nitrogen and N_2O by reacting the gaseous effluents with a reducing agent in the presence of a zeolitic

catalyst (column 2, lines 25-35). Suitable reducing agents include methanol (column 2, lines 55-68). Suitable catalysts include zeolite beta having a silica to alumina molar ratio of at least 30 and such a zeolite may be in hydrogen form (column 4, lines 45-65 and column 6, lines 35-40).

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Grasselli et al.

6. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-308831.

JP 2000-308831 discloses a catalyst composition for the selective catalytic reduction of nitrogen oxides comprising a hydrogen form zeolite beta having a silica to alumina molar ratio of 20-200 [0032].

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by JP 2000-308831.

7. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Feeley et al.

Feeley et al. (US 5,776,423) discloses a catalyst composition useful in the reduction of nitrogen oxides comprising a zeolite beta in hydrogen or proton form having a silica to alumina molar ratio of about 25-60 (column 3, lines 33-43).

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Feeley et al.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-308831 in view of Grasselli et al.

JP 2000-308831 discloses a catalyst composition for the selective catalytic reduction of nitrogen oxides comprising a hydrogen form zeolite beta having a silica to alumina molar ratio of 20-200 [0032]. The process for reducing nitrogen oxides comprising contacting the nitrogen oxides in the presence of the catalyst to selectively reduce nitrogen oxides using methane as a reducing agent in the presence of excess oxygen [0018].

The difference between the JP reference and the claims is that the JP reference does not disclose that the reducing agent is methanol and/or dimethyl ether.

Grasselli et al. (US 5,374,410) discloses a process for the reduction of nitrogen oxides using a reducing agent. Grasselli et al. teaches that suitable reducing agents include methanol and C2-C4 paraffins (column 2, line 58 - column 3, line 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method taught by the JP reference to include the use of methanol as a reducing agent in light of the teachings of Grasselli et al. One would have been motivated to do so in light of the teaching by Grasselli et al. that

methanol and methane are functionally equivalent in the reduction of nitrogen oxides using a reducing agent. One of ordinary skill would have been motivated to substitute art recognized functionally equivalent materials with a reasonable expectation of success from the combination.

Response to Arguments

Applicant's arguments filed December 28, 2005 have been fully considered but they are not persuasive.

With respect to the rejection under 35 USC 102(b) over Grasselli et al., applicant argues that Grasselli et al. does not teach the use of a proton type beta zeolite having the claimed molar ratio and states that a ZSM-type zeolite is different than a beta zeolite. However, the reference clearly teaches the use of a proton type beta zeolite having the claimed molar ratio. Refer to columns 3-4, in particular column 4, lines 50-68, column 6, line 35-45, and claim 3. The teachings of the reference are not limited to ZSM-type zeolites.

With respect to the rejection under 35 USC 102(b) over the JP reference, applicant argues that the reference does not disclose a proton type beta zeolite having a silica to alumina molar ratio of 20-70, but discloses a beta zeolite having a Si/Al ratio of 10-100. This argument has been considered but is not persuasive. First, a Si/Al atomic ratio yields a silica to alumina molar ratio of 20-200, which meets the range claimed herein. Further, the reference specifically teaches a proton type beta zeolite at paragraph [0032] and in claim 7 of the JP document. Applicant further argues that the JP reference further includes a noble metal component. However, the use of an

additional metal is not precluded by the instant claims. Note the "comprising" language. Therefore applicant's arguments are not commensurate in scope with what has been claimed. Applicant argues that it is meaningless to compare the molar ratio of the reference to the instantly claimed ratio because of the metal component. However, the molar ratio is a characteristic of the zeolite, irrespective of whether there is an additional metal component supported.

With respect to the rejection under 35 USC 102(b) over the Feeley reference, applicant argues that the reference teaches that Fe, Cu, and Co are supported and that it is meaningless to compare the molar ratio of the reference to the instantly claimed ratio because of the metal components. This argument has been considered but is not persuasive. The use of additional metals are not precluded by the instant claims. Note the "comprising" language. Therefore applicant's arguments are not commensurate in scope with what has been claimed. With respect to the molar ratio, the molar ratio is a characteristic of the zeolite, irrespective of whether there is an additional metal component supported.

With respect to the rejection under 35 USC 103(a) over the JP reference in view of the Grasselli reference, applicant argues again that the JP reference uses an additional metal. However, as discussed above, the use of an additional metal is not precluded by the instant claims. Applicant further argues that methanol and methane are not functionally equivalent. However, no data has been provided to support this assertion. Further, the assertion regarding the temperature is not commensurate in scope with the claims because no temperatures are required – only reducing/removing,

which applicant admits both are able to do. Applicants assertions of unexpected results are not persuasive, because they are not commensurate in scope with what has been claimed. Also, they do not appear to be relevant to the issues as hand because the references disclose the catalyst claimed. The basis of the obviousness rejection is that the reducing agents are functionally equivalent.

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Johnson whose telephone number is (571) 272-1176. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Johnson
Primary Examiner
Art Unit 1725
1/15/06

CAJ
January 15, 2006